Amendments to the Claims

Listing of Claims - This will replace all prior listings of claims in the application:

1. (Original) An optimizing planermill system comprising:

a) a control system;

b) a workpiece feed path for feeding an array of workpieces linearly downstream to an optimizing planer;

c) means for setting the size of gaps between successive workpieces in the array of workpieces being translated linearly into the planer so that each gap between successive workpieces in the array of workpieces provides enough time for relative movement of at least one of movable cutting elements in the planer and movable guiding elements so as to obtain relative movement between the cutting elements and the workpiece being next fed in so as to obtain optimized positioning corresponding to the workpiece being next fed into the planer;

d) the optimizing planer downstream along the workpiece feed path operably coupled to the control system, the optimizing planer having an entrance, for receipt of a rough workpiece, and an exit, for discharge of an at least partially finished workpiece;

e) a workpiece interrogator situated along the workpiece feed path upstream of the entrance and operably coupled to the control system so as to provide the control system with workpiece property information for each workpiece entering the optimizing planer;

wherein the control system provides the optimizing planer with control information based upon the workpiece property information for each workpiece;

wherein the optimizing planer moves at least one of movable guiding elements and the cutting elements at the workpiece passes through the optimizing planer according to the control information for each workpiece.

2. (Original) The apparatus of claim 1 wherein said each gap is optimized individually so that said enough time for relative movement between the cutting elements and the workpiece is only enough time for the individual optimization of the next successive workpiece in the array of workpieces.

3. (Original) The apparatus of claim 1 wherein said means for setting the size of gaps includes means for accelerating workpiece speed of the workpiece along, and cooperating with, said workpiece feed path so as to control said size of gaps.

4. (Original) The apparatus of claim 3 wherein said workpiece feed path includes workpiece transportation means for transporting the workpiece downstream from said means for accelerating workpiece speed, downstream to the planer.

5. (Original) The apparatus claim 4 further comprising the planer, and further comprising workpiece interrogation means for interrogating the workpiece to determine workpiece data corresponding to attributes of the workpiece,

and a workpiece optimization system that receives the workpiece data corresponding to attributes of the workpiece from said workpiece interrogation means, determines an optimized cutting solution for the work piece, and sends control instructions to said means for accelerating workpiece speed.

6. (Original) The apparatus of claims 3 wherein said means for accelerating workpiece speed includes one or more of a fixed speed transverse acceleration device, a variable speed transverse

7. (Original) The apparatus of claim 5 wherein said workpiece interrogation means includes one or more of a linear workpiece interrogator and a transverse workpiece interrogator.

8. (Original) The apparatus of claim 4 wherein said workpiece transportation means includes one or more of a fixed speed intermediate transport device, a variable speed intermediate transport device.

9. (Original) The apparatus of claim 3 wherein said workpiece feed path means includes one or more of a sheet feeder, a fixed speed lug transfer and a variable speed lug transfer.

10. (Original) The apparatus of claim 1 wherein said size of gaps includes wood to be trimmed downstream in a trimmer according to an optimized trim solution.

11. (Original) The apparatus of claim 1 further comprising:

a) workpiece sensing means to sense one or more of the position, velocity and acceleration of a workpiece in the array of workpieces upstream of the planer; and

b) means for the control system to receive data from said workpiece sensing means and using said data from said workpiece sensing means, to control said size of gaps to establish, control and/or to correct a minimum required gap between each successive workpiece of the array of workpieces.

12. (Original) The apparatus of claim 5 wherein said control system and said workpiece optimization system are combined into a singular gap optimization system.

13. (Original) The apparatus of claim 1 further comprising means by determining in-piece gap-reduction for a successive series of workpieces in the array of workpieces wherein said means for setting the size of gaps between successive workpieces cooperates with said means for determining in-piece gap-reduction so as to reduce said size of gaps where an optimized planning solution for a downstream workpiece in said successive series of workpieces provides for in-piece setting of the cutting elements within said downstream workpiece to as to pre-position the cutting elements for commencing an optimized planning solution for a next adjacent upstream workpiece in said successive series of workpieces, whereby said size of gap between said downstream and upstream workpieces is a reduced size of gap.

14. (Original) The apparatus of claim 13 wherein said reduced size of gap is reduced to substantially zero gap.

15. - 17. (Canceled)